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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,879	02/17/2005	Sung Chul Juh	P26588	5668

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EXAMINER	
JOSEPH, DENNIS P	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
11/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/524,879	JUH ET AL.	
	Examiner	Art Unit	
	Dennis P. Joseph	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *05 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/524,879.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to amendments filed in application No. 10/524,879 on September 5, 2007. Claims 1-11 and 13-21 are pending and have been examined.

Claim Rejections – 35 USC § 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103(a) that forms the basis for the rejections under this section made in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1-11 and 13-21** rejected under 35 U.S.C. 103(a) as being unpatentable over **Low et al. (US 2004/0046741 A1)** in view of **Junod et al. (US 2002/0126094 A1)**

Low teaches in Claim 1:

A pointing device ([0007]) comprising:

a light emitter that illuminates (Figure 4, **108**, [0044], light source is an LED) a subject comprising one of a surface of a finger, a lattice, and a perceivable pattern ([0044], "These

images may be used to determine the direction, position, speed, and acceleration of the moving (or stationary) finger.");

a hole through which light from the light emitter is transmitted; (Figure 4, **105**, [0043], "That is, the movement area 105 provides a boundary for forming the active portion of the touch pad **102**.");

an image-acquisition area for taking an image of the subject from the transmitted light (Figure 4, **110**, [0044], "image acquisition sensor **110**");

an image former that forms the image by focusing light reflected from the image-acquisition area; (Figure 4, lens **124**, [0047])

converter that converts the image formed by the image former into an electric signal (Figure 4, **112**, [0045], microcontroller **112** for determining direction, position, speed and acceleration of finger and outputting the signals);

an operator that detects a change of the image and calculates an amount of the change using the electric signal output from the converter. (Figure 4, microcontroller **112**, which is part of **110**.); but

Low does not explicitly teach that the input device comprises "a contact sensor which surrounds the image-acquisition area and controls an on/off state of the light emitter or the converter based on whether the contact sensor is touched by a human body or an object.

However, in the same field of endeavor, optical mice, Junod teaches of a "hand detect circuit **126** for detecting the presence of a hand" (Junod, [0044]) and "capacitive hand detection circuit

embodiment for direct and indirect coupling of the hand" ([0017]) This circuit can determine if the point device is in use or not and to wake it from sleep mode (read as on/off state selection). Figure 7 shows the hand detect circuit along with the electrodes **122** and **124** used for the detection. This hand detect circuit would be placed on the **top part of the mouse housing** around the touch sensitive areas that are responsive to touch.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to integrate the hand detect circuit as taught by Junod with Low's optical mouse with the motivation that this detection circuit will allow the use of a sleep mode and can save power when the mouse is not in use. "The hand presence is used to wake up from the sleep mode." (Junod, [0049])

Low teaches in Claim 2:

A pointing device ([0007]) comprising:

a light emitter (Figure 4, **108**, [0044], light source is an LED);

a light guide structure that guides light from the light emitter (Figure 4, **114**, light pipe/guide as part of the optical system, [0046]) to a subject comprising one of a surface of a finger, a lattice, and a perceivable pattern ([0044], "These images may be used to determine the direction, position, speed, and acceleration of the moving (or stationary) finger.");

an image-acquisition area for taking an image of the subject from the guided light (Figure 4, **110**, [0044], "image acquisition sensor **110**");

an image former that forms the image by focusing light reflected from the image-acquisition area (Figure 4, lens **124**, [0047]);

a converter that converts the image formed by the image former into an electric signal (Figure 4, **112**, [0045], microcontroller **112** for determining direction, position, speed and acceleration of finger and outputting the signals); and

an operator that detects a change of the image and calculates an amount of the change using the electric signal output from the conveter. (Figure 4, microcontroller **112**, which is part of **110**.); but

Low does not explicitly teach that the input device comprises "a contact sensor which surrounds the image-acquisition area and controls an on/off state of the light emitter or the converter based on whether the contact sensor is touched by a human body or an object.

However, in the same field of endeavor, optical mice, Junod teaches of a "hand detect circuit **126** for detecting the presence of a hand" (Junod, [0044]) and "capacitive hand detection circuit embodiment for direct and indirect coupling of the hand" ([0017]) This circuit can determine if the point device is in use or not and to wake it from sleep mode (read as on/off state selection). Figure 7 shows the hand detect circuit along with the electrodes **122** and **124** used for the detection. This hand detect circuit would be placed on the **top part of the mouse housing** around the touch sensitive areas that are responsive to touch.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to integrate the hand detect circuit as taught by Junod with Low's optical mouse with the motivation that this detection circuit will allow the use of a sleep mode and can save power when the mouse is not in use. "The hand presence is used to wake up from the sleep mode." (Junod, [0049])

Low teaches in Claim 3:

The pointing device ([0007]) as defined by claim 1, wherein the light emitter comprises one of a light emitting diode, a laser diode, and an organic electroluminescence. (Figure 4, **108**, [0044], "By way of example, the light source **108** may correspond to a light emitting diode (LED) such as a visible light LED or an infrared LED.")

Low teaches in Claim 4:

The pointing device ([0007]) as defined by claim 3, wherein the light emitter comprises at least one light emitting diode. (Figure 4, **108**, [0044], "By way of example, the light source **108** may correspond to a light emitting diode (LED) such as a visible light LED or an infrared LED.")

Low teaches in Claim 5:

The pointing device ([0007]) as defined by claim 1, wherein the converter is a CMOS image sensor or a CCD image sensor. ([0044], "image acquisition sensor **110** may correspond to a CMOS image sensor.")

Low teaches in Claim 6:

The pointing device ([0007]) as defined by claim 1, further comprising a selection button for selecting a target with a pointer moved by the pointing device or entering a command. ([0027], "the peripheral input device **20** may also include one or more buttons that provide a clicking action for performing actions on the display screen. By way of example, the actions may include selecting an item on the screen, opening a file or document, executing instructions, starting a program, viewing a menu, and/or the like.")

Low teaches in Claim 7:

The pointing device ([0007]) as defined by claim 1, wherein the image former comprises one of a lens and a mirror. (Figure 4, lens **124**, [0047], "lens **124** may be provided to focus the image onto the sensor **110**." Figure 4 shows a spherical-shaped lens.)

Low teaches in Claim 8:

A pointing device ([0007]) comprising:

a light emitter (Figure 4, **108**, [0044], LED);

a light guide structure that guides light from the light emitter to a subject (Figure 4, **114**, light pipe/guide as part of the optical system, [0046]);

an image-acquisition area for taking an image of the subject from the guided light (Figure 4, **110**, [0044], "image acquisition sensor **110**");

an image former that forms the image by focusing light reflected from the image-acquisition area (Figure 4, lens **124**, [0047]);

a housing coupled to the image former (Figure 4, housing **104**);

a converter that converts the image formed by the image former means into an electric signal (Figure 4, **112**, [0045], microcontroller **112** for determining direction, position, speed and acceleration of finger and outputting the signals);

a printed circuit board on which the converter is fixed (The microcontroller is a PCB);

a cover that protects the light emitter, the image former, the housing, the converter, and the printed circuit board (Figure 7, **212**, [0055], "In one embodiment, the inner shell **222** is configured to cover the electronic components disposed on the PCB **210**");

an operator that detects change of the image and calculates an amount of the change using the electric signal output from the converter. (Figure 4, microcontroller **112**, which is part of **110**.); but

Low does not explicitly teach that the input device comprises "a contact sensor which surrounds the image-acquisition area and controls an on/off state of the light emitter or the converter based on whether the contact sensor is touched by a human body or an object.

However, in the same field of endeavor, optical mice, Junod teaches of a "hand detect circuit **126** for detecting the presence of a hand" (Junod, [0044]) and "capacitive hand detection circuit embodiment for direct and indirect coupling of the hand" ([0017]) This circuit can determine if the point device is in use or not and to wake it from sleep mode (read as on/off state selection). Figure 7 shows the hand detect circuit along with the electrodes **122** and **124** used for the

detection. This hand detect circuit would be placed on the **top part of the mouse housing** around the touch sensitive areas that are responsive to touch.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to integrate the hand detect circuit as taught by Junod with Low's optical mouse with the motivation that this detection circuit will allow the use of a sleep mode and can save power when the mouse is not in use. "The hand presence is used to wake up from the sleep mode." (Junod, [0049])

Low teaches in Claim 9:

The pointing device ([0007]) as defined by claim 8, wherein the subject comprises one of a surface of a finger, a lattice, and any perceivable pattern. ([0044], "These images may be used to determine the direction, position, speed, and acceleration of the moving (or stationary) finger.")

Low and Junod teach in Claim 10:

The pointing device ([0007]) as defined by claim 8, wherein the contact sensor is for determining whether the pointing device is in use (The combination teaches to place the hand detect circuit around the touch sensitive area of Low's mouse to detect whether it is in use or not)

Low and Junod teach in Claim 11:

The pointing device (Junod, [0012]) as defined by claim 10, wherein the contact sensor

(.[0044], "hand detect circuit **126**") is embodied in a direct contact or non-contact fashion. ([0017], "capacitive hand detection circuit embodiment for direct and indirect coupling of the hand") (The combination teaches to place the hand detect circuit around the touch sensitive area of Low's mouse to detect whether it is in use or not)

Low and Junod teach in Claim 13:

The pointing device (Junod, [0012]) as defined by claim 10, wherein the contact sensor ([0044], "hand detect circuit **126**") is positioned around the image-acquisition area within a radius of about 3 cm from the center of the image acquisition area. (The contact sensor is located at the top part of the mouse housing and the image acquisition area **110** as taught by Low is located near the bottom of the mouse housing. Therefore the distance between them is roughly the distances between the top and the bottom of a mouse which is roughly 3 cm.)

Junod teaches in Claim 14:

The pointing device (Junod, [0012]) as defined by claim 10, wherein the contact sensor ([0044], "hand detect circuit **126**") operates only when a program requiring the pointing device. ([0045], "When the device enters a sleep mode, such as described above, the switch disconnects the external capacitor **132** and RF circuit **128**, and connects to a hand detect circuit **126**.")

Junod teaches in Claim 15:

The pointing device (Junod, [0012]) as defined by claim 10, wherein the contact sensor

([0044], "hand detect circuit **126**") performs the role of a selection switch for selecting a present position or a predetermined function indicated by a pointer. ([0044], "these two electrodes **122** and **124** are connected to an RF circuit **128** for driving and/or receiving signals using the electrodes **122** and **124**.")

Junod teach in Claim 16:

The pointing device (Junod, [0012]) as defined by claim 15, wherein the role of the selection switch is performed according to a time interval between contact and non-contact with the contact sensor ([0052], "In the absence of any inputs after a certain period of time, such as one minute, a true sleep mode can be entered. The controller would be in a stop mode, the RF circuitry would be turned off, and the hand detect circuit 126 would be turned on.")

Low teaches in Claim 17:

The pointing device ([0007]) as defined by claim 8, wherein the light guide structure (Figure 4, **114**), the image former (Figure 4, **124**), and the housing (Figure 4, **104**) are united as an integral structure. (Figure 4 shows them all to be part of the same structure.)

Low teaches in Claim 18:

The pointing device ([0007]) as defined by claim 1, wherein the image-acquisition area (Figure 4, **110**) is coated in order to prevent damage or contamination of the image-acquisition area. ([0048], "The housing **154** is generally formed from a translucent or semi-translucent

material that also provides strength and durability for protecting the internal components of the device **150**.")

Low teaches in Claim 19:

The pointing device ([0007]) as defined by claim 1, wherein the operator receives the electric signal from the converter and determines the distance and direction for a pointer to be moved by calculating the electric signal. (Figure 4, **112**, [0045], microcontroller **112** for determining direction, position, speed and acceleration of finger and outputting the signals)

Low teaches in Claim 20:

The pointing device ([0007]) as defined by claim 1, wherein the image-acquisition area (Figure 4, **110**) is a transparent member or a virtual plane positioned at a predetermined distance from the image former. (Figure 4 shows lens **124** to be a predetermined distance area from the image-acquisition sensor **110**. This setup is indicative of a virtual plane.)

Low teaches in Claim 21:

The pointing device as defined by claim 2, wherein the image former and the light guide structure are united as an integral structure. (Figure 4 shows them all to be part of the same structure.)

Response to Arguments

4. Applicant's arguments with respect to claims 1,2 and 8 have been considered but are not persuasive.

As for the contact sensor, the rejection combined Junod's hand detect circuit with Low's mouse to give it an ability to sense whether the device was in use or not and to provide an on/off mechanism, such as sleep mode. Applicant has argued that the hand detect circuit is not positioned around the image acquisition area, however the combination in the 103(a) teaches to do so.

According to case law, there would be no invention in shifting the contact sensor to a different position since the operation of the device would not then be modified. (In re Japikse, 86 USPQ 70 (CCPA 1950).

As a result, Applicant's arguments to the position of the contact sensor are respectively considered to be not persuasive.

Conclusions

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis P. Joseph whose telephone number is 571-270-1459. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJ

AMR A. AWAD
SUPERVISORY PATENT EXAMINER